

Honeywell

CT8602C Professional Fuel Saver Thermostat

Application

This thermostat provides energy saving control for a 24 Vac gas, oil, or electric heating or heating/cooling system with independently controlled fan. System switch positions include HEAT-OFF-COOL; fan switch positions include ON-AUTO.

Power is supplied for the device by three AA alkaline batteries (included in package). This allows the thermostat to be compatible with all control applications.

Heat and cool anticipation is fixed; no adjustment is necessary. Cycle rates are adjustable for heating.

The current rating is 1.6A maximum up to 30 Vac.



Recycling Notice

If this control is replacing a control that contains mercury in a sealed tube, do *not* place your old control in the trash. Contact your local waste management authority for instructions regarding recycling and the proper disposal of your old control.

If you have any questions, call Honeywell Inc. at 1-800-468-1502.

Installation

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given on the product to make sure the product is suitable for your application.
3. After installation is complete, check out product operation as provided in these instructions.
4. Allow thermostat to warm to room temperature before operating.



CAUTION

Disconnect power supply to prevent electrical shock or equipment damage.

IMPORTANT: *Push excess wire back into the hole, and plug the hole with non hardening caulk, putty or insulation to prevent drafts from affecting thermostat operation.*

LOCATION

Install thermostat and wallplate about 5 ft. (1.5m) above the floor in an area with good air circulation at room temperature.

Do not install the thermostat where it may be affected by:

- drafts or dead spots behind doors, in corners, or under cabinets.
- hot or cold air from ducts.
- radiant heat from sun or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas such as an outside wall, behind the thermostat.

IF REPLACING AN EXISTING THERMOSTAT

Turn off power to thermostat at furnace or boiler. A two-transformer system may require turning off two switches or disconnects. Remove any existing wallplate or subbase from wall. To avoid miswiring later, label or write down each wire with the letter or number on the wiring terminal as the wire is removed.

IF NEW INSTALLATION

Run cable to the hole in the selected wall location, and pull about 3 in. (76 mm) of wire through the opening. Color-coded, 18 gauge thermostat cable with at least one conductor for each wiring terminal is recommended.

MOUNTING WALLPLATE

Remove thermostat from wallplate (Fig. 1).

The wallplate does not require leveling for operation, but only for appearance. The wallplate mounts directly onto the wall with the screws included in the package. Use the wallplate as a template, and with a pencil, mark two mounting screw positions that best fit the application using two of the three mounting holes in the wallplate (Fig. 2). Use 3/16 in. bit to drill holes for anchors. Gently tap anchors into holes until flush with the wall surface. Thread wires through the center opening of the wallplate. Then mount the wallplate using the two screws provided. Gently tighten screws, level top surface of wallplate, and securely tighten the screws.

Fig. 1—Removing thermostat from wallplate.

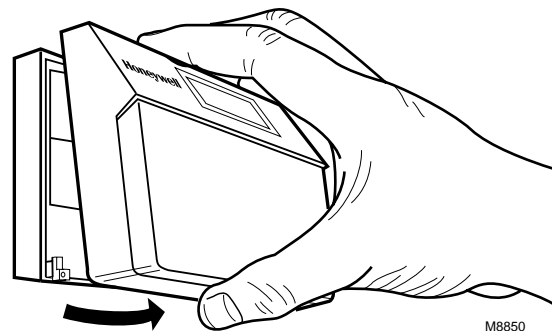
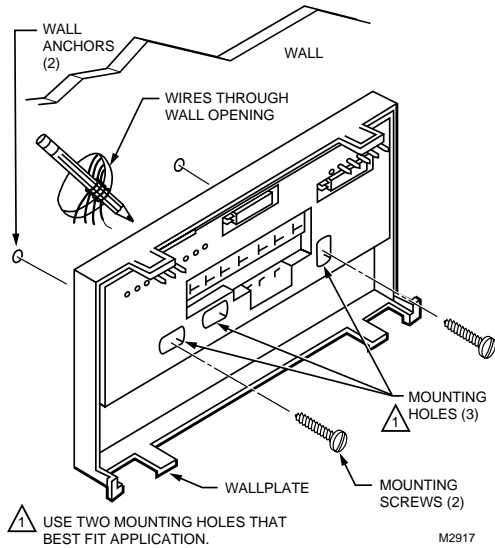


Fig. 2—Mounting wallplate on wall.



WIRING

All wiring must comply with local electrical codes and ordinances.

Disconnect power before wiring to prevent electrical shock or equipment damage.

The shape of the terminal barrier permits insertion of straight or conventional wraparound wiring connections. Either method is acceptable.

Refer to Table 1 and Fig. 4 through 8 for wiring guidelines.

NOTE: Keep all wiring restricted to ribbed area surrounding terminals (Fig. 3) to assure thermostat/wallplate contact.

TABLE 1—TERMINAL CROSS REFERENCE.

Old Thermostat Terminal Marked	Function	New Thermostat Terminal Marked
G or F	Fan	G
Y or C	Cooling	Y
W or H	Heating	W
RC, V, VC or R	Power	RC
RH, M, VR, 4	Power	R

Fig. 3—Keep wiring restricted to ribbed area surrounding terminals.

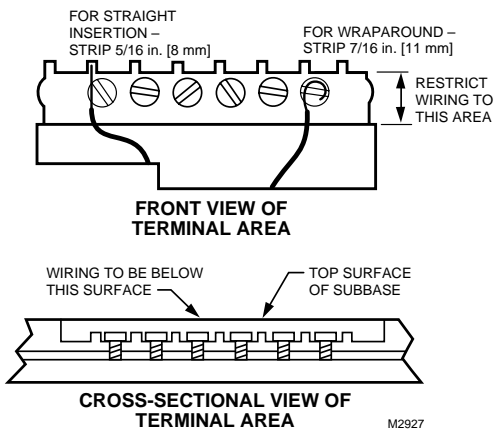


Fig. 4—CT8602C heating-only circuit in a continuous pilot gas system.

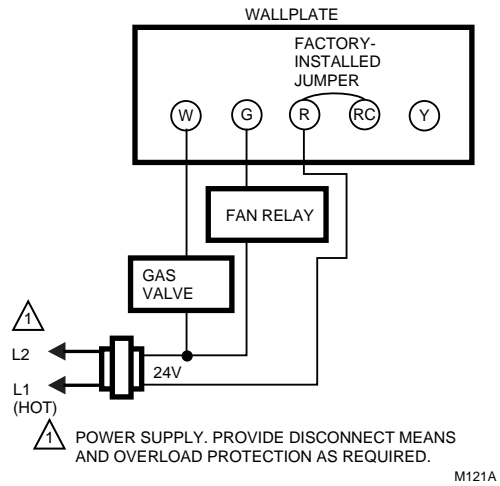


Fig. 5—CT8602C heating-only circuit in an oil system.

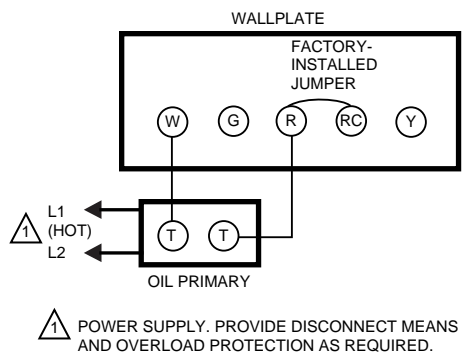
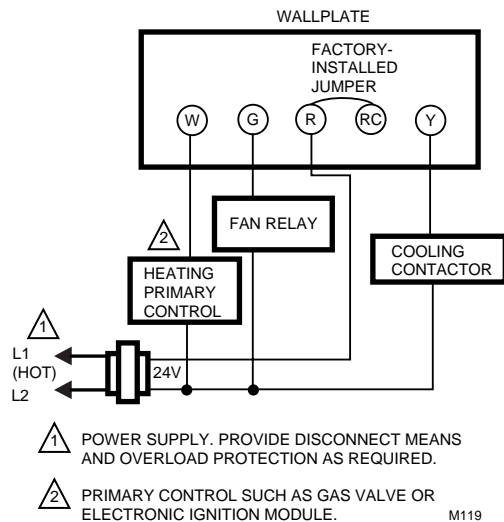


Fig. 6—CT8602C heating/cooling circuit in a single transformer system with gas heat and electric cooling or electric heat and electric cooling, RC and R terminals.



Setting and Adjustments

Fig. 7—CT8602C heating/cooling circuit in a two transformer (one for heating, one for cooling) system with gas heat and electric cooling, RC and R terminals. Remove factory-installed R-RC jumper.

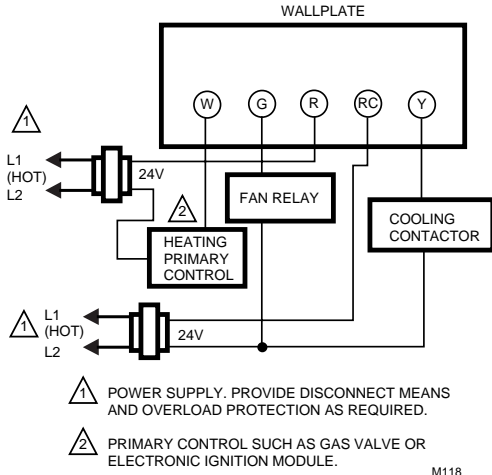


Fig. 8—CT8602C heating/cooling circuit in an oil heating and electric cooling system. Heating transformer is in oil primary, RC and R terminals. Remove factory-installed R-RC jumper.

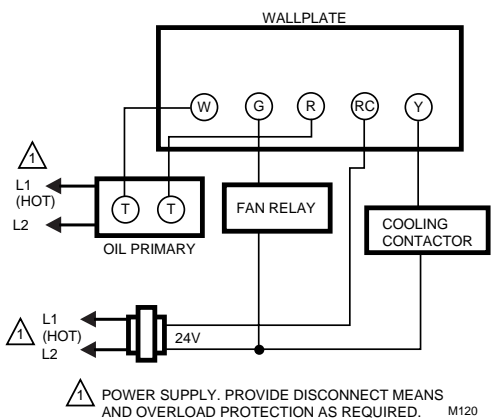
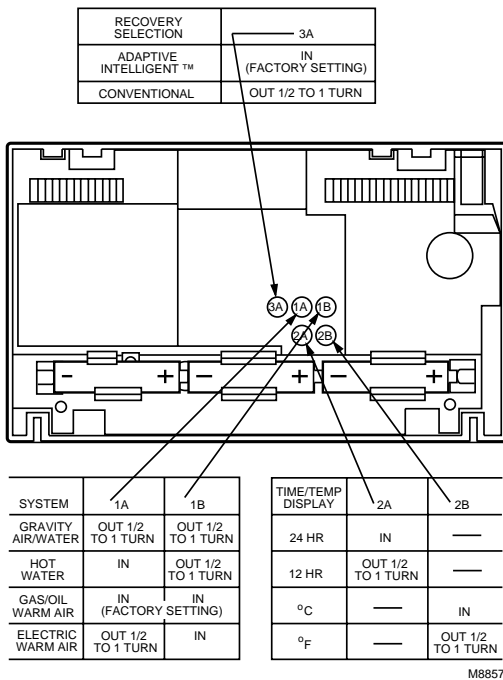


Fig. 9—Adjustments.



ADJUSTING CYCLE RATE

NOTE: MOST APPLICATIONS DO NOT REQUIRE A CHANGE IN CYCLE RATE.

The room air temperature varies slightly from the comfort temperature setting with the cycling of the furnace or air conditioner. The equipment cycles off and on as the room temperature approaches the setpoint.

The cycle rate of this thermostat is set for heating at six cycles per hour and for cooling at three cycles per hour as shipped from the factory. The cooling cycle rate cannot be adjusted. The heating cycle rate can be adjusted by turning one or both cycle rate adjustment screws located on the back of the thermostat. See Fig. 9. Back out the screw about one-half to one turn, or turn in until tight.

ADAPTIVE INTELLIGENT RECOVERY™/ CONVENTIONAL RECOVERY

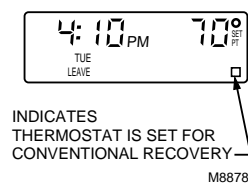
The thermostat is factory-set for Adaptive Intelligent Recovery™, but can be converted to conventional recovery using screw 3A on the back of the thermostat as indicated in Fig. 9.

With Adaptive Intelligent Recovery™, the room reaches the comfort temperature at the exact time programmed into the thermostat. The control temperature increases gradually, and turns the equipment on and off several times to reach the comfort temperature slowly and on time. There is no wasted energy associated with rapid temperature changes and temperature overshoot.

With conventional recovery, program the start time to be earlier than the desired comfort time. It may require some trial and error to arrive at the best starting time.

NOTE: If you adjust screw 3A for conventional recovery, an indicator appears in the lower right corner of the thermostat display as a reminder that the Adaptive Intelligent Recovery™ feature is not active. (Fig. 10).

Fig. 10—Conventional recovery indicator.



SETTING TIME/TEMPERATURE

The display readout can be converted between a 12 and 24 hour clock or °C and °F using screws 2A and 2B as indicated in Fig. 9.

INSTALLING BATTERIES

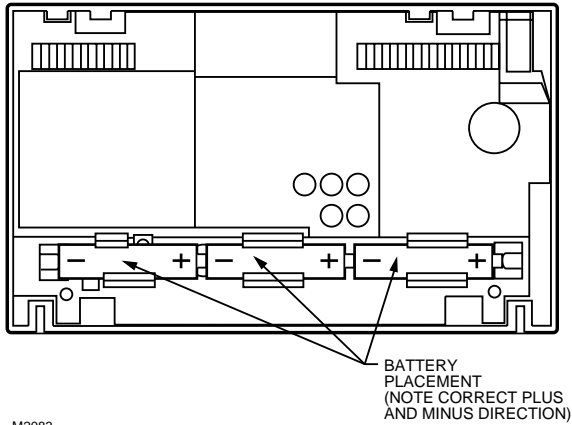
Power is supplied for the thermostat by three AA alkaline batteries. Batteries are included with thermostat. Install batteries in back of thermostat as shown in Fig. 11. The display will flash 1:00 PM and room temperature.

When the batteries are going dead, the display will flash REPL BAT. Set system switch to OFF. Remove the thermostat from the wall and install three new AA alkaline batteries. We recommend Energizer® batteries. Change

batteries within approximately 30 seconds from the time the batteries are removed to prevent program loss and reprogramming.

IMPORTANT: *The low battery warning displays about two months before the batteries are dead. When the batteries are dead, the system shuts down. After batteries are replaced, thermostat requires reprogramming.*

Fig. 11—Battery placement.



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MOUNTING THE THERMOSTAT

Hang the thermostat on the tabs at the top of the base (Fig. 12a). Swing down and press on lower edge until thermostat snaps into place (Fig. 12b). Open the cover, and tighten the captive mounting screws (Fig. 12c).

SETTING DAY AND TIME

Set present day and time. When the thermostat is first turned on, the display will read 1:00 PM and room temperature. It will go off for a few seconds, then begin to flash on and off.

Press .

Press TIME OR to set the current time.

Press .

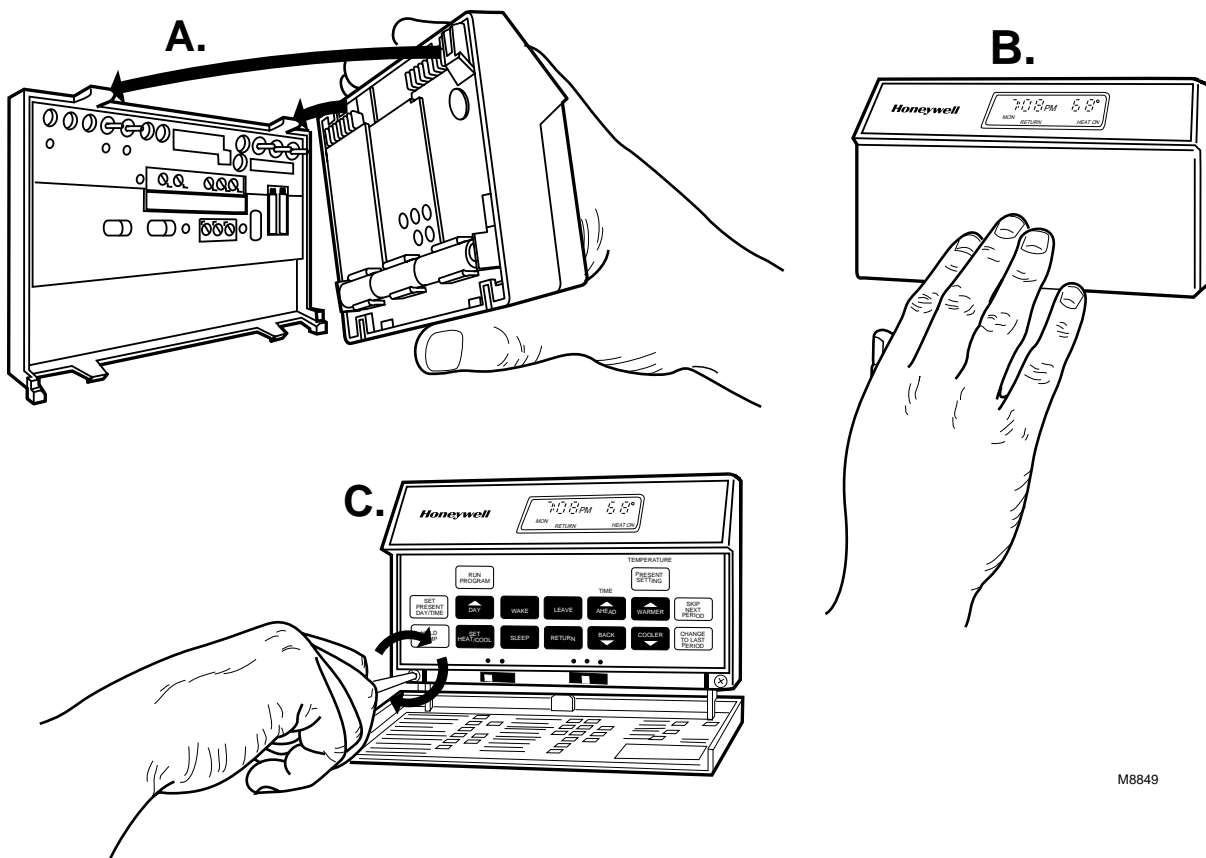
Press to set the current day. Each press of the

DAY KEY advances the display one day.

If the display does not come on:

- Check mounting of thermostat to wallplate. If loose or misaligned, remove thermostat and reinstall on wallplate, making sure it is firmly attached.
- Check to see that all the batteries are good and installed correctly.

Fig. 12—Mounting thermostat on wallplate.



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Checkout

HEATING

Move the system switch to HEAT and the fan switch to AUTO. Press WARMER key until the setting is about 10°F (6°C) above room temperature. Heating should start and the fan should run after a short delay. Press COOLER key until the setting is about 10°F (6°C) below room temperature. The heating equipment should shut off.

COOLING



CAUTION

Do not operate cooling if outdoor temperature is below 50°F (10°C). Refer to manufacturer's recommendations.

NOTE: When cooling setting is changed, thermostat will wait up to five minutes before turning on the air conditioner. This delay protects the compressor.

Move the system switch to COOL and the fan switch to AUTO. Press COOLER key until the setting is about 10°F (6°C) below room temperature. The cooling equipment and fan should start. Press WARMER key until the setting is about 10°F (6°C) above room temperature. The cooling equipment and fan should stop.

FAN

Move the system switch to OFF, and the fan switch to ON. The fan should run continuously. When the fan switch is in the AUTO position, the fan cycles with the heating or cooling system.

INSTALLER SELF-TEST (Optional)

Perform the following test as a check of all thermostat functions. *If thermostat does not respond as indicated, replace thermostat.*

1. Press AHEAD and BACK keys at the same time, while holding down keys, all segments of the display should be on (see Fig. 13).

Fig. 13—All segments on display.



2. Set system switch to OFF. Press AHEAD and BACK and PRESENT SETTING keys at the same time to enter self-test.

3. Press each key as listed on next page, and look for response listed as key is held down and released.

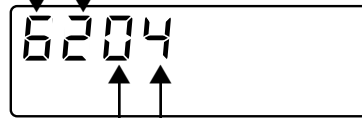
System Switch Position	Press This Key	Look For This Response	
		Key Down	Key Released
OFF		03	Blank
		07	Blank
		15	Blank
COOL (with fan in AUTO)		15	Cooling and fan on.
		15	Cooling and fan off.
OFF		06	Blank
		02	Blank
		05	Blank
		04	Blank
		01	Blank
		00	Blank
		12	See note (A)
(CHECK EACH POSITION)		08	Blank
		13	Microprocessor mask no. and revision no.
		09	Blank
		14	Blank
		14	Blank
HEAT [⚠]		14	Heating on.
		14	Heating off.
OFF		10	Blank
		11	Normal operating display.

END SELF-TEST

- [⚠] For electric heat fan operation, the fan operates with the heating system when the fan switch is in AUTO.
- ^(A) HEAT displayed when system switch is in HEAT, COOL when in COOL, neither when in OFF. A four-digit code is displayed with each digit explained as follows.

First Digit	Cycle Rate Setting (cph at 50% On Time)
0 or 1	1
2 or 3	3
4 or 5	9
6 or 7	6

Second Digit	Clock (hr)	Degrees	Recovery Setting
0	12	F	Conventional
1	12	C	Conventional
2	12	F	Adaptive Intelligent Recovery™
3	12	C	Adaptive Intelligent Recovery™
4	24	F	Conventional
5	24	C	Conventional
6	24	F	Adaptive Intelligent Recovery™
7	24	C	Adaptive Intelligent Recovery™



Third Digit	System Switch Position
0	OFF
2	COOL
4	HEAT

Fourth Digit	System Switch Position
0	Any position
1	HEAT, OFF, or COOL
4	Any position
5	HEAT, OFF, or COOL

Allow thermostat to reach room temperature before programming. Then refer to owner's manual for programming instructions and homeowner troubleshooting.

This equipment is a Class B digital apparatus which complies with Canadian Radio Interference Regulations, CRC c. 1374.

Honeywell

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